

**APPENDIX C**  
**ARCHEOLOGICAL SURVEY**

# **UNITED UTILITIES ARCHAEOLOGICAL COMPLIANCE**

## **Section 106 Report**

### **Quinhagak Telecommunication Tower Locality**

Prepared for

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## **EXECUTIVE SUMMARY**

This report summarizes the Section 106 archival and literature review, archaeological compliance survey, and consultation for a proposed telecommunication tower and associated facilities located south of Quinhagak, Alaska. The survey was conducted by Erik D. Hilsinger of Stephen R. Braund & Associates on May 19, 2004 under contract with United Utilities, Incorporated. The report includes descriptions of the project, environment, survey area, and survey methods. The report also includes a discussion, based on a review of available literature and the Alaska Heritage Resource Survey (AHRS) review, of prehistory, ethnography, history and known historic properties in the Quinhagak area, as well as a discussion of consultation, field survey methods and results, and recommendations based on the results of the archival and literature review, archaeological compliance survey and consultation. The recommendations are based on the finding of “No historic properties affected” (36 CFR Part 800.4(d)(1)) because no cultural resources were located in the project area of potential effect (APE) and/or the undertaking will have no effect on known historic properties in the APE as defined in 36 CFR 800.11(i). Therefore, construction activities should not impact known or documented cultural resources. Documentation for this finding includes:

- A description of the undertaking, specifying federal involvement, and its area of potential effect, including photographs, maps, and drawings as necessary;
- a description of the steps taken to identify historic properties, including, as appropriate, efforts to seek information pursuant to 36 CFR 800.4(b); and
- the basis for determining that no historic properties are present or affected (36 CFR 800.11(d)).

The recommendation also states that in the event that archaeological and/or historical remains are discovered during construction, work in that area will cease immediately, and the SHPO will be contacted as soon as possible to avoid damaging potentially important historic properties.

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## **LIST OF ACRONYMS AND ABBREVIATIONS**

ADEC	Alaska Department of Environmental Conservation
ADNR	Alaska Department of Natural Resources
AHPA	Alaska Historic Preservation Act
AHRS	Alaska Heritage Resources Survey
AIRFA	American Indian Religious Freedom Act
ANCSA	Alaska Native Claims Settlement Act
APE	Area of Potential Effect
ARP	Alaska Regional Profiles
ARPA	Archaeological Resources Protection Act
BP	Years Before Present
CFR	Code of Federal Regulations
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPS	National Park Service
NRHP	National Register of Historic Places
OHA	Office of History and Archaeology
ROW	Right-of-Way
RS2477	Revised Statute 2477 from the Mining Act of 1866
SHPO	State Historic Preservation Office(r)
USACE	U.S. Army Corps of Engineers
USGS	U.S. Geological Survey
UUI	United Utilities, Incorporated

## **INTRODUCTION**

This report summarizes the Section 106 archival and literature review, archaeological compliance survey and consultation for a proposed telecommunication tower and associated facilities, which are located south of Quinhagak (*Kwinhagak*), Alaska. Like many communities, a variety of spellings have been used to represent the phonetic equivalent of the Yup'ik name for the community (*Kuineraq*), so for this report the community will be referred to by the spelling used by Orth (1971), while the Native Tribe will be referred to with their preferred spelling (*Kwinhagak*).

## **PROJECT DESCRIPTION AND AREA OF POTENTIAL EFFECT**

United Utilities, Inc. (UUI) proposes to construct a telecommunications tower and associated facilities south of the community of Quinhagak, Alaska (Figures 1 and 2) on Arolik River Road, which leads to a new subdivision. Project work will include drilling core samples of the soil using a drill rig mounted on a tracked vehicle. If the soil is suitable, UUI will drive pilings in an approximately 50 foot diameter circle with the tower base itself in the center. Pilings may be plain steel or refrigerated, and the tower and pilings may be driven from 20 to 70 feet below the surface depending on the outcome of the soil testing. UUI will use local sand and gravel fill to build up a pad for ancillary structures and parking for utility vehicles. UUI will assemble a prefabricated structure on site to support the antenna and will house power and electronics gear for the microwave relay system. The local utility will supply power via power lines strung on poles along the existing road right of way.

## **ENVIRONMENT**

Quinhagak is located at the most recently formed mouth of the Kanektok River, which moves significant distances during annual flood events. The community incorporates residents from several smaller communities. The Kanektok and Arolik rivers originate in the Ahklun Mountains some 30 miles from the community. The Kanektok River originates in Kagati Lake, while the Arolik River is gathered from several feeder streams in the mountain range. The intervening plain between the mountains and Kuskokwim Bay segues from wet tundra with melt ponds and streams with some drier elevated sections to the mud flats of the bay. Vegetation includes sedges, reindeer lichens, cranberries, blueberries, cotton grass, bistort, monkshood, buttercups, violets, and lousewort in the wetter tundra areas. Drier areas and areas upriver from Quinhagak may have willows, alders, and dwarf birch, with occasional stands of balsam poplar in the middle to upper reaches of the rivers (Wolfe, Gross, Langdon, Wright, Sherrod, Ellanna, Sumida, and Usher 1984).

A wide variety of potential subsistence resources are available in the vicinity of Quinhagak. The river systems of the area are highly productive and include anadromous fish, including all five salmon species and arctic char, as well as year-round resident fish such as round whitefish, grayling, and rainbow trout (Wolfe et al 1984). Fauna present in the Quinhagak area include brown bears, beavers, fox, snowshoe and arctic hares, moose, land otters, minks, ptarmigan, and seasonal waterfowl. Waterfowl migrate through the area in spring and fall, with some staying for the summer. These may include geese, ducks, swans, cranes, and sea ducks. Marine mammals in the area include bearded, spotted, ringed and ribbon seals; walrus, beluga, sea lions, and Pacific white-sided dolphin. Coastal fish include smelt, cisco, starry flounder, and sole (Wolfe et al 1984).

More distant resources utilized by Quinhagak residents include those of the mountains and those of coastal and riverine areas along the coast. Towards the community of Eek to the north, the rivers may contain cod, blackfish, burbot, and broad whitefish. Herring occur along the gravel beaches of Goodnews Bay and Security Cove. The mountains have marmots, porcupines, parka squirrels, small herds of caribou and feral reindeer (Wolfe et al 1984).

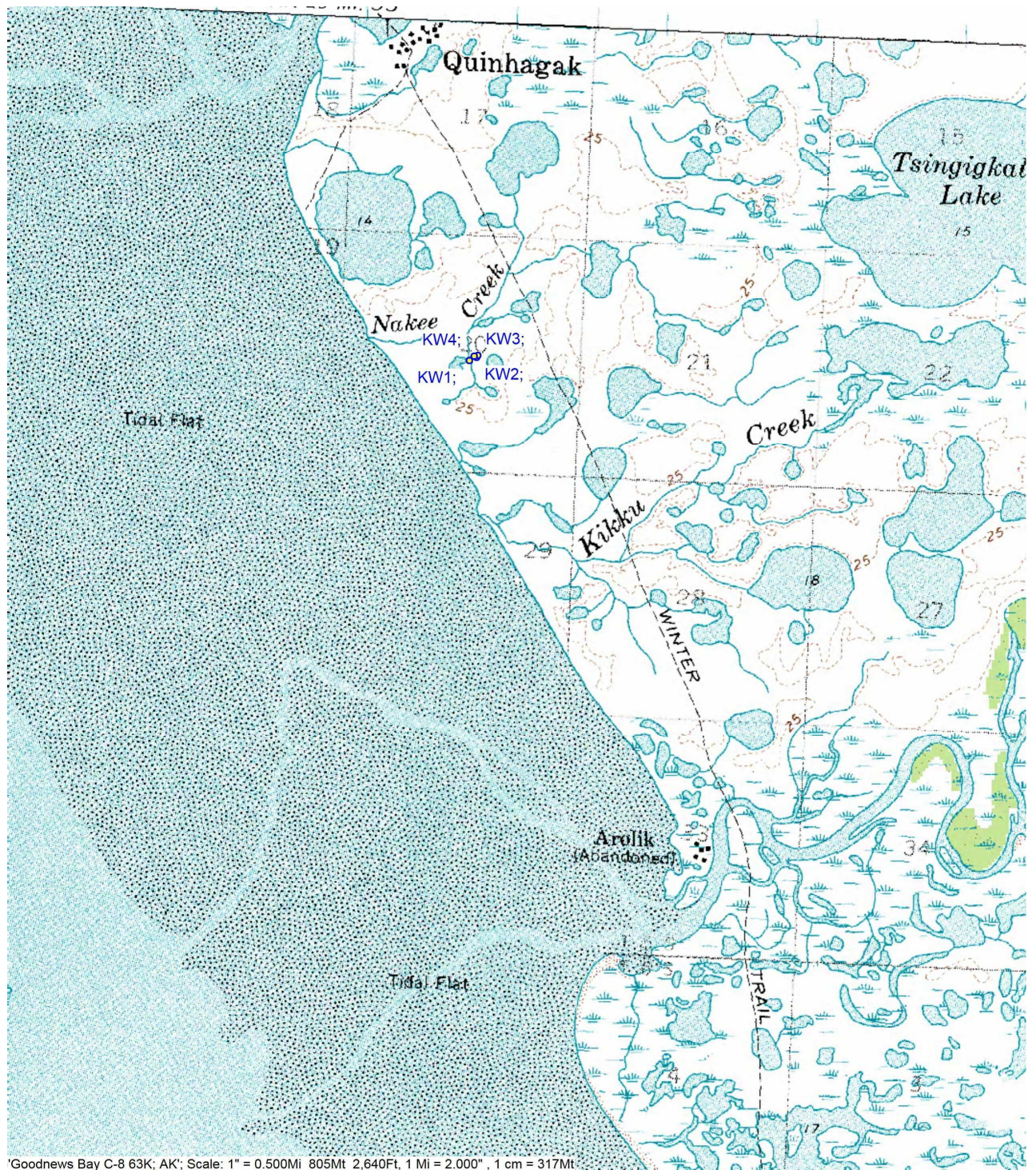
**Figure 1: Overview of the Proposed Quinhagak Facility and Known Cultural Resources**

Figure 1 Removed. Confidential.



**Figure 2: Map of the Proposed Quinhagak Facility**

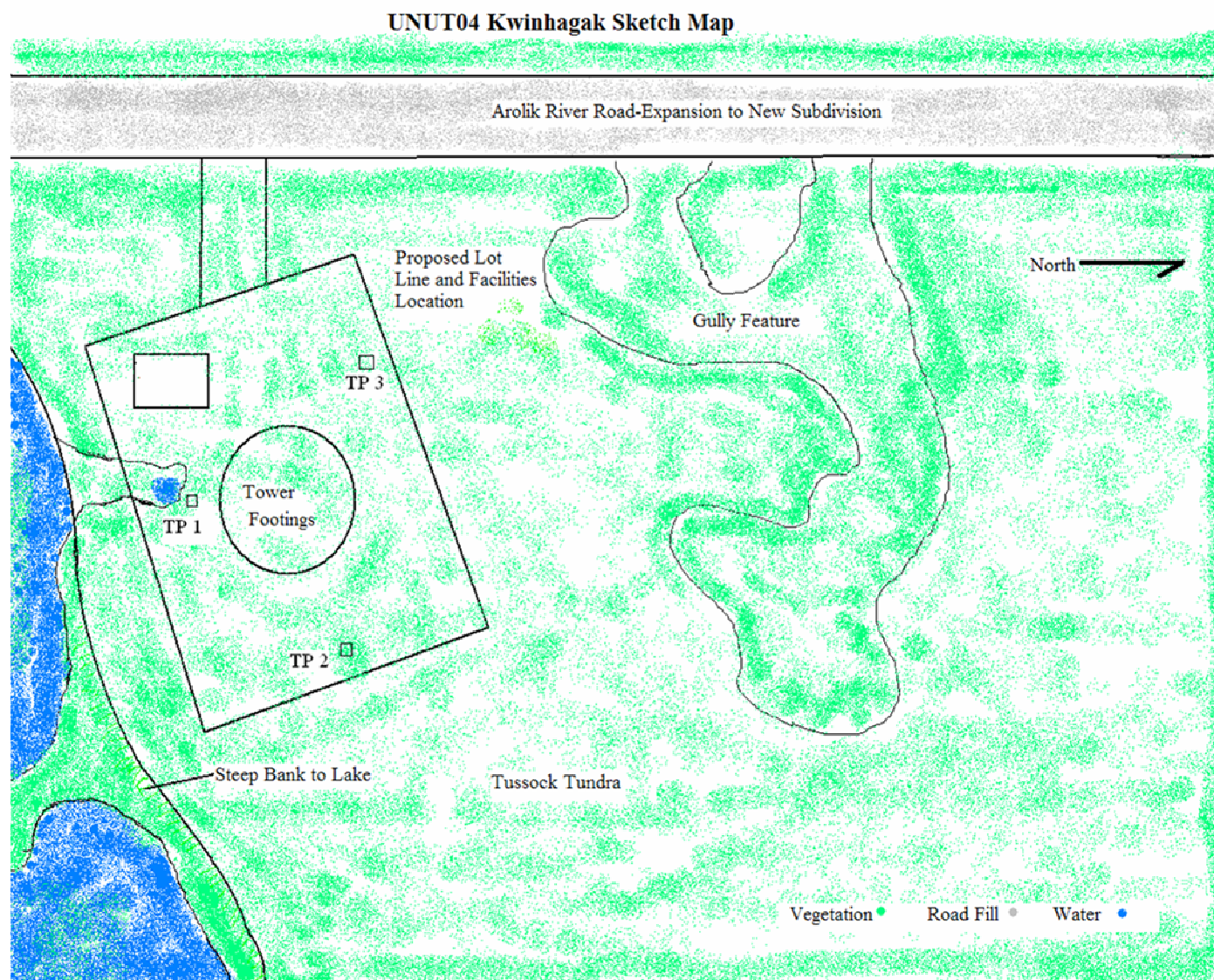
**Figure 2: Map of the Proposed Quinhagak Facility**



**Figure 3: Sketch Map of the Proposed Microwave Tower and Ancillary Facilities**



Figure 3: Sketch map of proposed microwave tower and ancillary facilities



## **SURVEY AREA**

Hilsinger confined the survey to the areas of potential effect of the proposed Quinhagak facility as shown in Figures 1, 2, and 3. A surveyor contracted by UUI outlined the property and easement prior to Hilsinger's fieldwork, and UUI employee Dave Christiansen flagged the corners in the field.

## **SURVEY METHOD**

### **Section 106 Compliance Procedure**

Section 106 of the National Historic Preservation Act (NHPA) (16 USC 470) and the Alaska Historic Preservation Act (41.35.240) were intended by their enactors to protect cultural resources in cases where modifications to the landscape may occur because of a planned project. Compliance with these state and federal laws is required when the project location is under the purview of federal or state stewardship, requires state or federal permits, or in cases where federal or state funds support or partially support the project. Federal and state agencies follow the Section 106 process (as outlined in 36 CFR 800) in reviewing project activities and prescribing appropriate actions to meet the requirements of compliance.

NHPA defines "historic properties" as prehistoric and historic districts, sites, buildings, structures, and objects listed or eligible for inclusion in the National Register including artifacts, records, and material remains related to the property (NHPA, 16 USC 470w, Sec. 301.5). Criteria used in determining the significance of "historic properties" are the same as the criteria used in determining the eligibility of the resource for listing on the National Register of Historic Places (36 CFR 60.41). For a cultural resource (e.g., districts, sites, buildings, structures and objects) to be eligible for the National Register of Historic Places, it must possess integrity of location, design, setting, materials, workmanship, feeling and/or association. In addition, the cultural resource must:

- be associated with events that have made a significant contribution to the broad patterns of our history;
- be associated with the lives of persons significant in our past;
- embody the distinctive characteristics of a type, period or method of construction, or that represent the work of a master, possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction; or
- yield, or be likely to yield, information important in prehistory or history (36 CFR 60.4).

Certain classes of cultural resources that are not ordinarily eligible for the National Register, but may be determined eligible under certain circumstances include cemeteries, birthplaces or graves of important people, religious properties, moved structures, reconstructed buildings, commemorative properties or properties achieving significance within the last fifty years (36 CFR 60.4).

Other relevant legislation that applies to cultural resources include, but are not limited to, the Antiquities Act of 1906 (16 USC 431 et seq.); the Archaeological Resources Protection Act of 1979 (ARPA) (16 USC 470 et seq.); the Abandoned Shipwreck Act of 1987 (P.L. 100-298); and the Native American Graves Protection and Repatriation Act (NAGPRA) (25 USC 3001-3013).

The assessment of effects on cultural resources is based on the regulations of the Advisory Council on Historic Preservation (36 CFR 800). The steps involve:

- determining whether the action being considered is an undertaking as defined by NHPA
- coordinating with other reviews (e.g., NEPA, NAGPRA, American Indian Religious Freedom Act [AIRFA], and ARPA), identifying the State Historic Preservation Officer and other likely consulting parties, and planning to involve the public
- identifying "historic properties" using the Secretary of the Interior's Standards (36 CFR 800.4). This

identification involves:

- establishing the area of potential effect (APE),
- reviewing available data,
- seeking information from others and identifying issues, and
- gathering information from Native American organizations that may place a religious or cultural significance on “historic properties” (e.g., ethnographic resources/traditional cultural properties and cultural landscapes) in the area of potential effect;
- evaluating all “historic properties” (e.g. cultural resources) for National Register eligibility on the basis of their significance (e.g., historical, archaeological, and/or cultural; see 36 CFR 60.4).

An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a “historic property” that qualify the property for inclusion in the National Register in a manner that would diminish the property’s integrity (e.g., location, design, setting, materials, workmanship, feeling), and/or association thus rendering it ineligible for the National Register. Direct effects to cultural resources, occurring at the same time and place, are predicated on changes to the significant characteristics (integrity and association) of a cultural property. Indirect effects to cultural resources include those impacts that result from the action later in time or further removed in distance but still reasonably foreseeable and could include increased access to and close proximity of project components to culturally sensitive areas. This could result in a greater vulnerability of cultural resources to damage caused by project personnel and equipment during construction and operation of facilities and infrastructure.

### **Literature and Archive Review**

The Section 106 survey included a review of site files maintained by the Alaska Heritage Resource Survey (AHRS) unit of the Alaska Office of History and Archaeology (OHA), a review of reports on archaeological, anthropological, and historical investigations in the region and in the project area, a field survey of the project area, and consultation with appropriate Native organizations.

Cultural resources investigations that have been conducted in the community include surveys or consultation for a subdivision (Wiersum 1978), for the airport (HDR Engineering Inc. 1996), and for the high school (R&M Consulting Inc. 1979). All were negative for cultural resources.

Several known archaeological and historical resources are located in and around Quinhagak (Figure 1 and Table 1). These include the abandoned village near the Arolik River mouth, the historic village of Quinhagak, and some house pits and an isolated artifact in the general vicinity of the community. There is one Native allotment located south of Quinhagak two and one-half miles north of Jacksmith Bay.

**Table 1: Sites in the Vicinity of Quinhagak**

Site #	Site Name	Site Description	Distance from Study Site (miles)
GDN-010	Arolik (Agaligamute, Arolic [USGS 1913], Aguliagamiut [Petroff 1880])	Historic	2.3
GDN-227	AA10387		14.1
		Ground slate ulu found on beach	0.5
GDN-241	Pug'uilnguarmiut	House pits	10.1
GDN-242	Quinhagak Village	House pits	1.8

Source: Department of Natural Resources, Office of History and Archaeology. AHRS files, 2004.

## **Background**

### **Prehistory of the Quinhagak Region**

The Yup'ik village of *Kwinhagak* was located on a geologically recently formed mouth of the Kanektok River, which gave the community its name, *Kuineraq* or new river mouth. The advancing erosion of the river has, however, removed much of the historic portion of the town and the community has been moving successively further from the original village location as the river continues to cut through the banks (Wolfe et al. 1984, R&M Consultants 1979). Bank erosion is caused by both river currents and thawing of riverbank sediments. Erosion measured along the river banks averages 20 feet per year, with a maximum of 60 feet in 1977. The historic portion of the community has either been moved or allowed to collapse into the river (R&M Consultants 1979).

In the greater area of Kuskokwim Bay from the broad delta regions to the uplands and mountainous areas beyond are a range of archaeological sites that date from several thousand years ago to the recent historical past. Dumond (1984) arranged sites in the region in the following chronological sequence: Northern Archaic sites at Kagati Lake and Security Cove; Arctic Small Tool tradition at Eek Lake; Norton tradition sites at Chagvan Bay; and Thule at Platinum and through the lower reaches of the Kuskokwim River drainage. It may be assumed that late Thule material culture was the pattern in use at the time of contact after Dumond's sequence.

### **History of the Quinhagak Area**

#### ***Russian period 1786-1867***

Petr Korsakovskiy visited Quinhagak in 1818 during an expedition ordered by the Russian American Company (VanStone 1988). Korsakovskiy noted Quinhagak residents as possessing some European goods likely traded to the area through intermediaries and as having some familiarity with Russian customs of the time (VanStone 1988: 46). Korsakovskiy also speculated that traders had visited the area before the consolidation of trading companies into the state-chartered monopoly Russian American Company. Independent traders and traders associated with the Lebedev-Lastochkin Company were known to have worked in the vicinity, and an expedition in the early 1790s led by Vassily Ivanov may have portaged from the Yukon to the Kuskokwim (VanStone 1988: 6). Subsequent to the Korsakovskiy expedition, Gavril Sarichev noted the village on his coastal survey expedition in 1826. The people of the area traveled to the Nushagak River trading post for trade with the Russian American Company at Novo-Aleksandrovsky Redoubt, across the river from modern Dillingham, after an uneasy peace was struck between the Aglegmiut of the Redoubt and their former neighbors and adversaries to the north (VanStone 1988).

#### ***American period (1867-present)***

After the purchase of Alaska from the Russians, the Alaska Commercial Company, which purchased the goods and chattels of the former Russian America Company, used Quinhagak as a port and warehouse location. The warehouse was located on what is called Warehouse Creek about six miles northwest of Quinhagak, and ships offshore used lighters to transport cargo to shore. This location was the best charted area for large ocean going ships to transfer their cargos to smaller, shallow draft riverboats for further transportation up the Kuskokwim River. In 1915, the mouth of the Kuskokwim River was charted and Bethel, some 65 miles north of Quinhagak, became the main port (Alaska Department of Community and Economic Development [ADCED] 2004).

In 1893, John Kilbuck established a Moravian mission in Quinhagak. Kilbuck visited the area repeatedly and established a church in the community, which continued to grow in influence in the region (Fienup-Riordan 1988). In 1900, an epidemic devastated the populations of Western Alaska, and many

communities lost more than half of their populations. Some communities were abandoned altogether, and survivors in some cases banded together for mutual support in the aftermath of the contagion (Fortuine 1992). John Kilbuck, the former Moravian missionary who served as census enumerator in 1900 on the Kuskokwim, was personally devastated by the loss of many of his Yup'ik friends along the entire river (Fienup-Riordan 1988). Table 2 shows the consolidation of the population from dispersed communities into a few modern towns following the epidemic and accelerating after the establishment of the Moravian school and increasing in the 1950s with heavy enforcement of truancy laws (Wolfe et al. 1984). The 1918 Spanish flu and many other less-virulent infectious diseases were introduced by gold miners, missionaries, and others coming from outside the region. This constant introduction of new illnesses coupled with chronic diseases such as tuberculosis and the high risks of the subsistence way of life slowed the recovery of the Native population of the area until the 1950s, when medical care and Native access to health care improved significantly (Fortuine 1992, Wolfe et al. 1984).

The Moravians opened a mission store in Quinhagak in 1904, a post office was opened in 1905, and a public school was opened in 1909. Between 1906 and 1909, over 2,000 reindeer were brought to the area and managed by the Kuskokwim Reindeer Company, a Native owned business (Wolfe et al. 1984). By 1937, the reindeer herds were no longer managed in the close herding system taught by Saami herders who had been brought from Norway by the Bureau of Education for the purpose of teaching herding. Instead, the reindeer were left to forage in an open range model and occasionally rounded up or hunted, and eventually they mixed with the wild caribou (Roehm 1937).

I.M. Reed traveled through Quinhagak in 1931 en route to examining the gold and platinum workings at Goodnews Bay and the Arolik River, taking the photograph in Figure 4. J.C. Roehm, a geologist working for the Territory, passed through the region while inspecting gold and platinum mining in the Goodnews Bay-Arolik River region in the 1930s. He reported that:

At several places in the Lower Kuskokwim region native Eskimos were met who had left their reindeer to care for themselves and had taken to prospecting. They make good prospectors for this region. They know the country well and can travel over the tundra on foot nearly twice as rapidly as a white man; they do not have to pack prepared foods, as they live principally on reindeer meat. Where the country does not afford wood with which the meat can be cooked they eat it raw. Several promising prospects were visited that had been found and staked this season by Eskimos and in several places they were working with efficient automatic dams constructed by themselves. They are very eager and quick to learn and deserve encouragement in their ambition to become prospectors (J.C. Roehm 1937a).

In 1937 several Quinhagak residents had mining claims up the Kanektok on streams feeding into Kagati Lake and on the Arolik River. According to a brief report on the Winchester Claims filed in 1937:



**Table 2: Population consolidation in Kuskokwim Delta communities 1880-2000.**

<b>Approximate Location</b>	<b>Community</b>	<b>1880</b>	<b>Community</b>	<b>1890</b>	<b>Community</b>	<b>1900</b>	<b>1910</b>	<b>1920</b>	<b>1930</b>	<b>1940</b>	<b>1950</b>	<b>1960</b>	<b>1970</b>	<b>1980</b>	<b>1990</b>	<b>2000</b>
Eek River	Akooligamute	162	Ahguliagamiut	106	Eek	0	0	119	0	170	141	200	186	228	254	280
	Kakhuiyagmute	8														
	Shovenagamute	58	Shovenagamute	62												
Apokak Slough	Apokagamute	94	Ahpokagamute	210												
	Itiutagamute	40	Chimingangamute	40												
Kuskokwak Creek	Kuskokvagamute	24	Kuskohkagamiut	115												
Warehouse Creek	Shineyagamute	40	Shinyagmiut	7												
Kanektok River	Quinehahamute	83	Quinhaghmiut	109	Quinhagak	201	111	193	230	224	194	228	340	412	501	555
Arolik River	Agaligamute	120	Aguliagamiut	94												
Jacksmith Bay	Takiketagmute	21														
Carter Bay	Kl-changamute	18	Kl-Changamiut	49												
Goodnews Bay	Mumtrahamute	162	Mumtrahamiut	162	Goodnews Bay	0	0	0	0	48	0	154	0	168	241	230
					Platinum	0	0	0	0	48	0	154	0	168	241	230
Security Cove	Tzahavgamute	48	Kinegnagmiut	76												
Total Population		878		1030		201	111	312	230	490	335	736	526	976	1237	1295

Source: Wolfe et al. 1984, ADCED 2004  
Stephen R. Braund & Assoc. 2004

**Figure 4: 1931 Photo of Quinhagak (I.M. Reed of the Alaska Territory Bureau of Mines)**

**Figure 4: 1931 Photo of Quinhagak by I.M. Reed of the Alaska Territory Bureau of Mines**



The seven claims named are placer claims, but staked as lode claims with representative measurements; are known as Discovery Claims Nos. 1 to 4 Above Discovery and Nos. 1 and 2 Below Discovery. These claims were staked and are owned by Willie Keseyulia, Guy Tegylre, Kilila Wassilie and Phillip Keseyulia (all native Eskimos). They live at Quinhagak and Akiak villages (J.C. Roehm 1937b).

The first mail delivered by air to Quinhagak arrived in 1934. Reed and Roehm both depended upon the *Moravian*, a diesel powered boat owned by the mission, to transport them from Bethel to Quinhagak on its twice-a-summer trip to the area, and then they hiked the 20 miles to Goodnews Bay along the beach, stopping at a Territory-maintained cabin along the Arolik River below the canyon (Reed 1931, Roehm 1937a).

Quinhagak incorporated as a second class city in 1975.

### **Consultation**

Stephen R. Braund & Associates (SRB&A) contacted representatives of Calista Corporation, Qanirtuuq Inc., and the Native Village of *Kwinhagak* for the purposes of consultation. SRB&A sent a letter describing the project and area of potential effect, as well as an USGS 1:63,360 USGS quadrangle delineating the project and known cultural resources to the above-named parties on May 15, 2004. SRB&A received a letter from Qanirtuuq Inc. dated May 20, 2004 that stated that the “Board of Directors...doesn’t have any comment of any significance” regarding cultural resources at the proposed tower site and they suggested contacting the Native Village of *Kwinhagak*. SRB&A discussed cultural resources with June McAtee of Calista Corporation on June 15, 2004 (McAtee 2004). Ms. McAtee stated in a fax dated June 15, 2004 that Calista Corporation “is not aware of any archaeological sites at the proposed locations,” but that “if any cultural resources are found as a result of the construction or installation of the telecommunication towers, Calista Corporation requests notification and documentation of the location of any artifacts or articles of cultural or antiquity value, and any structures, or other remains of things religious, cultural or of archaeological interest or significance which are discovered on corporation lands” (McAtee 2004). SRB&A also discussed cultural resources at the proposed tower site with the Native Village of *Kwinhagak* on June 15, 2004. Wassilie Bavilla, the president of the Native Village of *Kwinhagak*, states that the tower site “appears, on the surface, to not have cultural resources other than the fauna of the tundra that [they] utilize.”

### **Field Survey Methods and Results**

Erik D. Hilsinger of SRB&A conducted field reconnaissance on May 18, 2004. Hilsinger was accompanied on the survey by United Utilities, Inc. employee Dave Christiansen. Field reconnaissance involved:

1. locating and identifying the proposed microwave tower site and associated gravel pad using direction provided by United Utilities;
2. pedestrian reconnaissance of the proposed tower site and associated gravel pad;
3. the excavation of small shovel tests for subsurface indications of cultural resources; and
4. documenting the proposed tower site and associated gravel pad through photographic, global positioning system (GPS) and notational means.

### **Quinhagak Facility**

The proposed Quinhagak facility, as depicted in Figures 1, 2, and 3 and delineated in Table 3, would consist of a gravel pad, equipment building, and a microwave tower with a 50-foot diameter driven-piling

support structure. The tower itself will be from 140 to 160 feet tall when finished.

Hilsinger and Christiansen arrived in Quinhagak via chartered Cessna 207 at 10:30 AM May 18, 2004. Weather was clear and sunny with temperatures in the upper 60s. Hilsinger and Christiansen traveled by ATV and were on the site at 11:25 AM. Christiansen proceeded to locate and flag the previously surveyed pad corner stakes and locate the center point of the lot while Hilsinger conducted an initial pedestrian survey of the proposed location. The property as delineated forms a sort of island surrounded by what appear to be erosion or thermokarst formed seasonal wetlands with four to six feet of relief (Appendix A, Photographs 1-3).

**Table 3: Waypoints and Associated Test Pits for the Quinhagak Locality**

Waypoint Name	Feature	Latitude	Longitude
KW1	Road access to Pad	59.7294	-161.90497
KW2	Test Pit 1	59.7296	-161.90416
KW3	Test Pit 2	59.7298	-161.90402
KW4	Test Pit 3	59.7297	-161.90442
KWAIR	<i>Kwinhagak</i> Airport	59.7569	-161.88321

Once Christianson delineated the pad footprint, Hilsinger proceeded to excavate three test pits in the footprint of the proposed pad. Due to the frozen soil and peat underlying the site, three test pits were opened concurrently and exposed to the sun. While these pits were exposed, Hilsinger conducted a broader pedestrian survey outside the property boundaries. On the surface in the general area of the proposed location, Hilsinger found a well-gnawed bird bone near the lake and a female caribou skull near the gully feature. He found some spent shotgun shells on the margin of the seasonal lake, and during the survey cranes and some geese were in the lake-wetlands area to the east and northeast of the proposed facility.

Hilsinger excavated Test Pit 1 on the margins of a surface pond on the bench above the lake (Appendix A, Photograph 4). Hilsinger anticipated that this area would be thawed to a greater depth due to the proximity to standing water, but discovered that the permafrost table was only six to eight inches under the surface. The surface vegetation of one to three inches in depth included a number of mosses and grass shoots. Silt and sand likely blown in from the beach and road were incorporated into the surface vegetation layer. Beneath this layer was a two to four inch layer of black to brown mineral soil incorporated with roots and decaying vegetable matter. Below this was an unknown depth of peat. Hilsinger found no cultural material was found.

Test Pit 2 was excavated near the property line furthest from the subdivision road (Appendix A, Photograph 5). This location was atop a small rise in the tussock tundra. Similar to Test Pit 1, the permafrost table was only six to eight inches under the surface vegetation. The surface vegetation included several kinds of moss, grass, and Labrador Tea in the top four inches of material. Three inches down was a layer of silt and sand incorporated with root matter and moss, and below this was a layer of black water and saturated vegetable matter. Below this level was a mix of impenetrable frozen peat and hard frozen silt and sand. No cultural material was found in this unit.

Test Pit 3 was excavated nearest the road on a low tussock overlooking the gully feature and in the distance a small seasonal stream (Appendix A, Photograph 6). As in Test Pits 1 and 2, subsurface ice was located six to eight inches under the surface. Similar efforts to proceed deeper were made here with little effect. Surface vegetation was four to six inches deep and included a variety of mosses and lichens as well as clumps of grasses and occasional Labrador Tea. Some mineral soil was mixed with the

subsequent root layer, two inches thick below the surface vegetation. No cultural material was found in this unit.

Over the following four hours, the test pits were exposed to open air and direct sunlight. When very little thawing was noted after one hour despite the unseasonably warm temperatures, Hilsinger procured water from the lake and gently poured it into the test pits to accelerate thawing while the frozen ice faces were scraped and gouged with shovel and trowel. This had little additional thawing effect and in all cases the frozen layer was impenetrable. This is likely due to the fact that the frozen material was permeable peat and vegetable matter with little mineral soil content. Therefore, the soil and vegetable matter already removed from the pits was checked for cultural material and evidence of use. Hilsinger found no indications of cultural material, prehistoric or historic, in the top 10 inches of material in any of the pits.

Several hundred yards away and across the road, the shoreward side of the beach ridge complex was visible (Appendix A, Photograph 7). The intervening distance was covered by channeled tussock and peat tundra. Local contacts indicated that artifacts had washed out of the beach ridges occasionally, but little use was made of the tundra upland besides occasional hunting. Local sources report that the favored hunting areas are closer to the Arolik River, and most people ride along the beach or take boats there.

### **Summary**

Hilsinger found no artifacts or indications of cultural materials, artifacts, or sites in any of the three test pits excavated in the area, along the surface disturbances, or along the four wheeler route through the pad site. SRB&A considers the area selected for the pad to be a low probability area for the discovery of cultural materials due to the swampy nature of the land.

### **RECOMMENDATIONS**

Based on the results of the AHRS and literature reviews, field survey and consultation, SRB&A recommends that a finding of “No historic properties affected” (36 CFR Part 800.4(d)(1)) be given for the proposed telecommunication tower, associated facilities and access routes because no cultural resources were located in the project APE and/or the undertaking will have no effect on known historic properties in the APE as defined in 36 CFR 800.11(i). SRB&A recommends that the proposed undertaking be given clearance to proceed. In the event that archaeological or historical materials are discovered during construction of the proposed telecommunication tower and related activities, activities in the vicinity of the find should be halted immediately and the SHPO should be consulted in order to avoid damaging potentially important historic properties.

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## **APPENDIX 1: PHOTOGRAPHS**

## **APPENDIX 1: PHOTOGRAPHS**

Photographs were taken with a Fuji brand disposable camera with flash, using 200 ASA color film. Electronic images were scanned by the processor and modified using Microsoft Picture It Express software, Version 7.0. Most modification included color, brightness, and contrast balancing, and photographs of test pit stratigraphy were cropped and then modified to better balance the contrast and brightness by eliminating the brightest portions of the overall photograph.



Photograph 1: Overview of proposed microwave tower, pad, and related structures. View looking north.



Photograph 2: View looking west northwest over seasonal lake from vicinity of Test Pit 1.





Photograph 3: View east southeast from island in lake towards Test Pit 1. Bluff is approximately four feet high.





Photograph 4: Test Pit 1. Near edge of lake in Photographs 2 and 3 on bluff top.



Photograph 5: Test Pit 2.





Photograph 6: Test Pit 3.



Photograph 7: View from proposed pad location over Arolik River Road to beach dune ridge complex.